What is claimed is:

1. In the fabrication of an electrical apparatus modular system in which in each module of said system there is at least one semiconductor chip, each said chip having an essentially parallel; electrical contacting surface, a heat generating region adjacent to said contacting surface and a heat radiating surface; said at least one chip being arranged in a surrounding, fluid containing, housing for that module in said system; with an external portion of said housing being attached to a heat sink;

an improvement in transfer of heat that is generated within each said chip to a location that is away from said heat radiating surface of said chip,

comprising in combination:

maintaining a coolant level in said housing that immerses said chips to and including at least each said heat generating region of said chip, and,

providing means for moving a coolant fluid in a closed path within said housing serially over each heat radiating surface of each chip and over at least a portion of the interior surface of said housing corresponding to where said heat sink is attached to the outside surface of said housing.

2. The heat transfer improvement of claim 1 wherein said surrounding housing is a metal cap having an outside region soldered to a heat sink and having heat transfer grooves in said interior surface of said housing corresponding to where said heat sink is attached to the outside surface of said housing.

3. In the fabrication of an electrical apparatus modular system in which in each module of said system there is at least one semiconductor chip, each said chip having an essentially parallel; electrical contacting surface, a heat generating region adjacent to said contacting surface and a heat radiating surface; said at least one chip being arranged in a surrounding, fluid containing, housing for that module in said system; with an external portion of said housing being attached to a heat sink;

an improvement in transfer of heat that is generated within each said chip to a location that is away from said heat radiating surface of said chip,

comprising in combination:

maintaining a thin film type thickness dimension range of about 50 to 100 micrometers in each said chip between said contacting surface and said heat radiating surface, and,

providing means for moving a coolant fluid in a closed path within said housing serially over each heat radiating surface of each chip and over at least a portion of the interior surface of said housing corresponding to where said heat sink is attached to the outside surface of said housing.

4. The heat transfer improvement of claim 3 wherein said surrounding housing is a metal cap having an outside region soldered to a heat sink and having heat transfer grooves in said interior surface of said housing corresponding to where said heat sink is attached to the outside surface of said housing.

5. The heat transfer improvement of claim 4 wherein said surrounding housing is attached around the periphery to a module size circuitry bearing insulating board and is a sealed active coolant chamber.

6. The heat transfer improvement of claim 4 wherein all chips of said at least one chip are in contact with a thin film thickness type insulating substrate, said substrate serving as support for micro-electro-mechanically enhanced heat transfer apparatus.

7. The heat transfer improvement of claim 6 wherein said micro-electro-mechanically enhanced heat transfer apparatus is a fluid pump.

8. The heat transfer improvement of claim 7 wherein said micro-electro-mechanically enhanced heat transfer apparatus is a fluid pump.

9. The heat transfer improvement of claim 8 wherein said micro-electro-mechanically enhanced heat transfer apparatus is a magnetically responsive gear type fluid pump.

10. The heat transfer improvement of claim 9 wherein all chips of said at least one chip have the contacts in said contacting surface joined to circuitry on a second of two sides of a thin film thickness type insulating substrate, said substrate on the first of said two sides having a pump assembly in thin film thickness layers where thin film pumps draw coolant from a reservoir of coolant surrounding said chips and substrate, propelling said coolant through thin film passageways from the periphery of said substrate through holes in

said thin film substrate and said chips and back to said reservoir and having contacts on said second of said two sides of said substrate that are joined to said circuitry on said insulating board.

11. The heat transfer improvement of claim 10 wherein all chips of said at least one chip have the contacts in said contacting surface joined to circuitry on a first of two sides of a thin film thickness type insulating substrate, said substrate on the second of said two sides having a pump assembly in thin film thickness layers where thin film pumps draw coolant from a reservoir of coolant surrounding said chips and substrate, propelling said coolant through thin film passageways from the periphery of said substrate through holes in said thin film substrate and said chips and back to said reservoir and having contacts on said second of said two sides of said substrate that are joined to said circuitry on said insulating board.

12. The heat transfer improvement of claim 10 wherein all chips of said at least one chip have the contacts in said contacting surface joined to circuitry on a second of two sides of a thin film thickness type insulating substrate, said substrate on the first of said two sides having a pump assembly in thin film thickness layers where thin film pumps draw coolant from a reservoir of coolant surrounding said chips and substrate, propelling said coolant through thin film passageways from the periphery of said substrate through holes in said thin film substrate and said chips and back to said reservoir and having contacts on said first of said two sides of said substrate that are joined to said circuitry on said insulating board.

13. The heat transfer improvement of claim 10 wherein all chips of said at least one chip have the contacts in said contacting surface joined to circuitry on an interior side of a module board, a first thin film thickness layer containing coolant fluid channels is in contact with the heat radiating surface of said chip, and a second thin film thickness layer containing MEMS type thin film pumps is positioned in contact with said first layer.

14. The process of providing actively pumped electrical apparatus comprising the steps of:

positioning at least one semiconductor chip, a substrate and a micro-electro-mechanical pump within a sealed housing containing a coolant fluid, in a physical relationship such that said coolant fluid is pumped over the heat generating surface of each said chip,

attaching said housing to a heat sink,

maintaining a coolant level in said housing that immerses said chips, and,

providing means for moving a coolant fluid in a closed path within said housing serially over each semiconductor chip and over at least a portion of the interior surface of said housing corresponding to where said heat sink is attached to the outside surface of said housing.

15. A MEMS type fluid pump comprising:

embedded conductive coils positioned in a circle surrounding an axle opening in a thin film thickness layer of insulating material,

a gear shaped rotary impeller member of thin film thickness attached to and surrounding an

axle extending through said axle opening said gear shaped rotary member having opposite pole magnetization on alternate teeth around the periphery thereof and, a fluid directional control layer of thin film thickness having fluid guidance passageways extending from the periphery to said impeller.